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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/489,515 01/21/00 PRAKASH S 06618-408001

020985

IM22/0620

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EXAMINER

MERCADO, J

ART UNIT

PAPER NUMBER

1745

DATE MAILED:

7.
06/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/489,515

Applicant(s)

PRAKASH ET AL.

Examiner

Mercado A Julian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 6-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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DETAILED ACTION

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Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-5, drawn to the product, classified in class 429, subclass 40.
 - II. Claims 6-26, drawn to the process of making, classified in class 427, subclass 115.

Inventions I and II are related as product made and process of making. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process such as one employing a materially different plasticizer.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Scott Harris on June 14, 2001, a provisional election was made with traverse to prosecute the invention of Group II, claims 6-26.

Affirmation of this election must be made by applicant in replying to this Office action. Claims

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1-5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

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Claim Objections

2. Claim 8 is objected to because of the following informalities:

a. In claim 8 at line 1, it is suggested to insert --point-- after "high boiling".

Appropriate correction is required.

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Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-10, 16, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 7 recites the limitation "the mixture" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "a second ionomer" in lines 1-2. This limitation is unclear since there is no prior recitation of a "first ionomer".

Claim 16 recites the limitation "the surface" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 in line 1 recites a similar limitation to claim 16 above and is rejected under the same grounds.

Claim 25 recites the limitation "Pt and Pt/Ru and an ionomer" in line 2. It is unclear if Applicant is claiming "Pt and Pt/Ru", or "Pt/Ru and an ionomer". It appears to the examiner that Applicant is claiming sole individual species. It is suggested to change "and" after "Pt" to a comma --,--.

Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 6-9, 11, 12, 14, 15, 17-22, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Cabasso *et al* (U.S. Pat. 5,783,325).

Cabasso teaches a process for making a catalyst ink for a fuel cell comprising mixing components comprising a catalytic material and poly(vinylidene fluoride). (Col. 4 line 50 *et seq*) A plasticizer such as N,N dimethylformamide is added. (Col. 7 line 67) The substrate is a backing of carbon paper. (Col. 6 line 42) The catalyst layer comprises Pt. (Col. 5 line 54) The bonding temperature is greater than about 180°C, e.g. 250°C (Col. 10 line 22)

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Cabasso *et al* as applied to claims 6-9, 11, 12, 14, 15, 17-22, 25 and 26 above.

The teachings of Cabasso are discussed above.

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Cabasso does not explicitly teach roughening the surface of the membrane prior to applying the catalyst ink. However, at the time the invention was made, the skilled artisan would have found such a step obvious for reasons such as increasing the surface area of the membrane.

9. Claims 10 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabasso *et al* as applied to claims 6-9, 11, 12, 14, 15, 17-22, 25 and 26 above, in view of Kindler (U.S. Pat. 5,992,008).

The teachings of Cabasso are discussed above.

Cabasso does not explicitly teach a second ionomer comprising a liquid copolymer of tetrafluoroethylene and perfluorovinylethersulfonic acid. However, Kindler teaches such a liquid copolymer. (Col. 3 lines 36-38, col. 6 line 28 *et seq*) Thus, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ a liquid copolymer of tetrafluoroethylene and perfluorovinylethersulfonic acid for reasons such as enhancing ionic conduction within the electrode.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cabasso *et al* as applied to claims 6-9, 11, 12, 14-22 and 24-26 above, in view of Scherer *et al* (U.S. Pat. 5,656,386).

The teachings of Cabasso are discussed above.

Cabasso does not explicitly teach a PSSA-PVDF membrane. However, Scherer teaches sulfonated and fluorinated membrane materials, *inter alia*. (Col. 1 line 28 to col. 3 line 55) Thus,

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at the time the invention was made, it would have been obvious to the skilled artisan to employ a PSSA-PVDF membrane for reasons such as improved long-term thermal and temporal stability.

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. The unofficial fax number is (703) 306-3429.

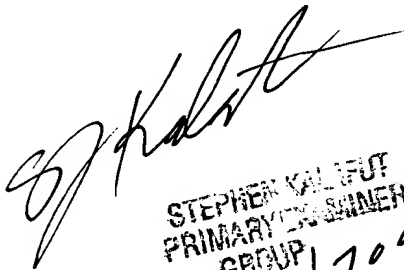
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

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jam June 18, 2001


STEPHEN VALENTE
PRIMARY EXAMINER
GROUP 1700